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10/518,211	12/16/2004	Carl L. Christensen	PU020299	5249

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EXAMINER	
RUTKOWSKI, JEFFREY M	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/518,211	CHRISTENSEN ET AL.	
	Examiner	Art Unit	
	Jeffrey M. Rutkowski	2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 December 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 December 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/16/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. **Claim 1** is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over **claim 4** of U.S. Patent No. 7,167,479, hereinafter referred to as '479 patent. Although the conflicting claims are not identical, they are not patentably distinct from each other because **claim 1** of the current application merely broadens the scope of **claim 4** of Patent No. 7,167,479 by omitting the feature of a master clock.

It has been held that the omission of an element and its function is obvious expedient if the remaining elements perform the same function as before. In re Karlson, 136 USPQ 184

(CCPA), also note Ex parte Rainu, 168 USPQ 375 (Bd. App. 1969); the omission of a reference element whose function is not needed would be obvious to one skilled in the art.

4. **Claim 2** is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over **claim 4** of the '479 patent in view of Lydon et al. (US Pat 6,680,939), hereinafter referred to as Lydon, and Self et al. (US Pat 5,634,043), hereinafter referred to as Self.

5. **Claim 2**, which depends from **claim 1**, of the present application is essentially the same as **claim 4** of the'479 patent. Except **claim 4** of the '479 patent does not disclose N inputs and M outputs. Lydon teaches the input and output absent from the disclosure of **claim 4** of the '479 patent by disclosing a router module with N inputs and M outputs **[col. 2 lines 64-67]** (said first, second and third routing engines each have N inputs to said input side thereof and M outputs from said output side thereof). It would have been obvious to a person of ordinary skill in the art at the time of the invention to use N inputs and M outputs in **claim 4** of the '479 patent to provide a parallelism in the router. **Claim 4** of the '479 patent also does not disclose the use of 3N inputs and 3M outputs. Self teaches the 3N input and 3M output concept absent from **claim 4** of the '479 patent by disclosing a router containing a dedicated input interface and a dedicated output interface for each device the router communicates with via point-to-point communication **[figure 8]** (said linearly expandable router formed from said first, second and third routing engines having 3N inputs and 3M outputs). Since Self teaches a router has an equal number of outputs and inputs, it would have been obvious to a person of ordinary skill in the art at the time of the invention to use 3N inputs and 3N outputs in **claim 4** of the '479 patent to maintain an equal number of inputs and outputs.

6. **Claim 3** is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over **claim 4** of the '479 patent in view of Lydon and Self, as applied to **claim 2** above, and further in view of Stacey et al. (US Pat 6,765,921), hereinafter referred to as Stacey.

7. **Claim 3**, which depends from **claim 2**, is essentially the same as **claim 4** of the '479 patent. Except, **claim 4** of the '479 patent does not disclose how the network cards are interconnected. Lydon teaches the routing engine interconnection limitation absent from **claim 4** of the '479 patent by disclosing the inputs of four router modules are connected via bus **[col. 4 line 51]**. It would have been obvious to a person of ordinary skill in the art at the time of the invention to use a bus to interconnect the routing engines in **claim 4** of the '479 patent since high-speed devices need to make use of parallelism. The combination of **claim 4** of the '479 patent and Lydon do not disclose the use of a full mesh. Stacey teaches the full mesh limitation absent from **claim 4** of the '479 patent and the teachings of Lydon by disclosing a communications network with a set of core nodes (routers) interconnected via full mesh **[figure 2]** (said first link providing said N inputs to said first routing engine to said input side of said second routing engine as a first N additional inputs thereto and providing said N inputs to said second routing engine to said input side of said first routing engine as a first N additional inputs thereto; said second link providing said N inputs to said first routing engine to said input side of said third routing engine as a first N additional inputs thereto and providing said N inputs to said third routing engine to said input side of said first routing engine as a second N additional inputs thereto; and said third link providing said N inputs to said second routing engine to said input side of said third routing engine as a second N additional inputs thereto and providing said N

inputs to said third routing engine to said input side of said second routing engine as a second N additional inputs thereto). It would have been obvious to a person of ordinary skill in the art at the time of the invention to use a full mesh in **claim 4** of the '479 patent to provide full path redundancy.

8. **Claim 4** is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over **claim 6** of the '479 patent, in view of Stacey.

9. **Claim 4**, which depends from **claim 1**, is essentially the same as **claim 6** of the '479 patent teaches each routing engine has a dedicated backup routing engine (a fourth, fifth and sixth routing engine). **Claim 6** of the '479 patent does not teach the use of a full mesh. Stacey teaches the full mesh limitation absent from **claim 6** of the '479 patent by disclosing a communications network with a set of core nodes (routers) interconnected via full mesh **[figure 2]** (a fourth routing engine having input and output sides; a fourth link, said fourth link coupling said input side of said first routing engine to said input side of said fourth routing engine; a fifth link, said fifth link coupling said input side of said second routing engine to said input side of said fourth routing engine; and a sixth link, said sixth link coupling said input side of said third routing engine to said input side of said fourth routing engine; wherein said first, second, third and fourth routing engines are arranged in a fully connected topology). It would have been obvious to a person of ordinary skill in the art at the time of the invention to use a full mesh in **claim 6** of the '479 patent to provide full path redundancy.

10. **Claim 5** is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over **claim 6** of the '479 patent, in view of Lydon and Self.

11. **Claim 5**, which depends from **claim 4**, is essentially the same as **claim 6** of the '479 patent. Except, **claim 6** of the '479 patent does not disclose N inputs and M outputs. Lydon teaches the input and output limitation absent from **claim 6** of the '479 patent by disclosing a router module with N inputs and M outputs (said first, second, third and fourth routing engines have N inputs to said input side and m outputs from said output side). It would have been obvious to a person of ordinary skill in the art at the time of the invention to use N inputs and M outputs in **claim 6** of the '479 patent to provide parallelism in the router. **Claim 6** of the '479 patent does not teach the use of 4N inputs and 4M outputs. Self teaches the 4N input and 4M output concept absent from the teachings of the '479 patent by disclosing a router that contains a dedicated input interface and a dedicated output interface for each device the router communicates with via point-to-point communication **[figure 8]** (said linearly expandable router formed from said first, second, third and fourth routing engines having 4N inputs and 4M outputs). Given that Self teaches a router has an equal number of outputs and inputs, it would have been obvious to a person of ordinary skill in the art at the time of the invention to use 4N inputs and 4N outputs in **claim 6** of the '479 patent to transfer information.

12. **Claim 6** is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over **claim 6** of the '479 patent of the '479 patent in view of Lydon and Self, as applied to **claim 5** above, and further in view of Stacey.

13. **Claim 6**, which depends from **claim 5**, is essentially the same as **claim 6** of the '479 patent. Except, **claim 6** of the '479 patent does not disclose how the network cards are interconnected. Lydon teaches the routing engine interconnection limitation absent from **claim 6** of the '479 patent by disclosing the inputs of four router modules are connected via bus **[col. 4**

line 51]. It would have been obvious to a person of ordinary skill in the art at the time of the invention to use a bus to interconnect the routing engines in **claim 6** of the '479 patent since high-speed devices need to make use of parallelism. The combination of **claim 6** of the '479 patent and Lydon do not disclose the use of a full mesh. Stacey teaches the full mesh limitation absent from **claim 6** of the '479 patent and Lydon by disclosing a communications network with a set of core nodes (routers) interconnected via full mesh **[figure 2]** (said first link providing said N inputs to said first routing engine to said input side of said second routing engine as a first N additional inputs thereto and providing said N inputs to said second routing engine to said input side of said first routing engine as a first N additional inputs thereto; said second link providing said N inputs to said first routing engine to said input side of said third routing engine as a first N additional inputs thereto and providing said N inputs to said third routing engine to said input side of said first routing engine as a second N additional inputs thereto; said third link providing said N inputs to said first routing engine to said input side of said fourth routing engine as a first N additional inputs thereto and providing said N inputs to said fourth routing engine to said input side of said first routing engine as a third N additional inputs thereto; said fourth link providing said N inputs to said second routing engine to said input side of said third routing engine as a second N additional inputs thereto and providing said N inputs to said third routing engine to said input side of said second routing engine as a second N additional inputs thereto; said fifth link providing said N inputs to said second routing engine to said input side of said fourth routing engine as a second N additional inputs thereto and providing said N inputs to said fourth routing engine to said input side of said second routing engine as a third N additional inputs thereto; said sixth link providing said N inputs to said third routing engine to said input side of

said fourth routing engine as a third N additional inputs thereto and providing said N inputs to said fourth routing engine to said input side of said third routing engine as a third N additional inputs thereto). It would have been obvious to a person of ordinary skill in the art at the time of the invention to use a full mesh in the '479 patent to provide full path redundancy.

14. **Claims 7-9** are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over **claim 4** of the '479 patent in view of Lydon.

15. **Claims 7-9** are essentially the same as **claim 4** of the '479 patent. Except, **claim 4** of the '479 patent does not disclose the use of an output side. Lydon teaches the output limitation absent from **claim 4** of the '479 patent patent by disclosing a router module with N inputs and M outputs (claim 7: at least three broadcast router components each of said at least three broadcast router components having an input side and an output side; claim 8: wherein said input side of each of said at least three broadcast router components has N inputs and said output side of each of said at least three broadcast router components has M outputs). It would have been obvious to a person of ordinary skill in the art at the time of the invention to use N inputs and M outputs in **claim 4** of the '479 patent to provide a parallelism in the router.

16. **Claims 1-6 and 10-11** are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over **claims 1-3 and 13, respectively,** of copending Application No. 10/518,212, hereinafter referred to as '212 application in view of Self. Although the conflicting claims are not identical, they are not patentably distinct from each other. **Claims 1-6 and 10-11** are essentially the same as **claims 1-3 and 13** of the '212 application. Except, **claims 1-3 and 13** of the '212 application do not disclose a redundant architecture. Self teaches the redundant architecture absent from **claims 1-3 and 13** of the '212

application by disclosing a "micro-cluster" which consists of a redundant architecture **[figures 17-18]**. It would have been obvious to a person of ordinary skill in the art at the time of the invention to use a redundant architecture in **claims 1-3 and 13** of the '212 application since mission critical network devices (routers, switches and servers) often have redundant hardware architectures to provide high availability.

17. **Claims 7-9** are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over **claims 7-9** of the '212 application. Although the conflicting claims are not identical, they are not patentably distinct from each other because **claim 7** of the current application merely broadens the scope of **claim 7** of the '212 application by omitting means for coupling a second router matrix.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

18. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

19. **Claims 7-8** are rejected under 35 U.S.C. 102(e) as being anticipated by Lydon.

20. For **claim** 7, Lydon teaches a expandable router **[title]**. A routing switch includes four 256x256 routers (at least three broadcast router components each of said at least three broadcast router components having an input side and an output side). Expansion ports are used to interconnect the four routers **[col. 4 lines 48-65 and figure 4]** (means for coupling said at least three linear expandable broadcast router components in a fully interconnected topology).

21. For **claim 8**, which depends from **claim** 7, Lydon teaches the routing modules have N inputs and M outputs **[col. 2 lines 64-67]** (wherein said input side of each of said at least three broadcast router components has N inputs and said output side of each of said at least three broadcast router component).

Claim Rejections - 35 USC § 103

22. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

23. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

24. **Claim 9 is** rejected under 35 U.S.C. 103(a) as being unpatentable over Lydon in view of Self.

25. For **claim 9**, which depends from **claim 8**, Lydon teaches the inputs of the four router modules are connected via bus **[col. 4 line 51]** (said coupling means further comprises means for coupling said N inputs for each one of said at least three broadcast router components to said routing engine for the other ones of said at least three broadcast router components). Lydon does not teach the use of a routing engine. Self teaches the routing engine limitation absent from the teachings of Lydon by disclosing a router with a routing core (routing engine) **[figure 10]** (each one of said at least three broadcast router components further comprises a routing engine coupled between said input and output sides thereof).

26. It would have been obvious to a person of ordinary skill in the art at the time of the invention to use a routing engine in Lydon's invention since each router serves a unique set of outputs **[Lydon, col. 4 lines 55-57]**, whose routes may need to be assessed before information can be transmitted.

27. **Claims 10 and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lydon in view of Stacey.

28. For **claims 10 and 11**, Lydon teaches a routing switch includes four 256x256 routers **[col. 4 lines 48-65 and figure 4]** (claim 10: providing first, second and third routers each having input and output sides; claim 11: providing a fourth router having input and output sides). Lydon teaches the router inputs are interconnected via bus **[col. 4 line 51]**. Lydon does not teach the use of a full mesh. Stacey teaches the full mesh limitation absent from the teachings of Lydon by disclosing a communications network with a set of core nodes (routers) interconnected via

full mesh **[figure 2]** (claim 10: coupling, using a first discrete path, said input side of said first router to said input side of said second router; coupling, using a second discrete path, said input side of said first router to said input side of said third router; and coupling, using a third discrete path, said input side of said second router to said input side of said third router; claim 11: coupling, using a fourth discrete path, said input side of said first router to said input side of said fourth router; coupling, using a fifth discrete path, said input side of said second router to said input side of said fourth router; and coupling, using a sixth discrete path, said input side of said third router to said input side of said fourth router).

29. It would have been obvious to a person of ordinary skill in the art at the time of the invention to use a full mesh to interconnect routers in Lydon's invention to provide full path redundancy. .

Conclusion

30. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Cvetko et al. (US Pat. 6,404,811) disclose an interactive video system that uses a broadcast switch matrix.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey M. Rutkowski whose telephone number is (571) 270-1215. The examiner can normally be reached on Monday - Friday 7:30-5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Patent Examiner
11/2/2007

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